

# Luke Woods, EI

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## SKILLS

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**Mechanical Design:** SolidWorks (CSWE, PDM, Simulation), ANSYS Workbench and ANSYS Mechanical

**Manufacturing:** 3D Printing, Soldering, Laser Cutting, Routing, Welding, CNC Machining, Manual Lathes and Mills

**Software:** Python, Excel VBA, Arduino, MATLAB, Git

**Professional:** Lean Manufacturing (JIT, Kaizen, 5S), GD&T, Rapid Prototyping, Project Management, Data Analysis

## WORK EXPERIENCE

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**Manufacturing Engineer I MTS NPPD**, Genie – Redmond, WA Aug 2022 – Present

- Redesigned product assembly line using lean manufacturing principles, SolidWorks, ANSYS, and PFMEA analysis, achieving improved ergonomics, safety compliance, and a 15% reduction in cycle time
- Managed a budget of \$75,000 for equipment development and coordinated \$430,000 in vendor purchases, achieving 10% cost savings while maintaining high-quality standards
- Facilitated cross-functional design reviews and provided manufacturability and assembly feedback that improved product quality and reduced unit BOM costs by 6%
- Compiled critical data from electrical and hydraulic harness drawings to improve schematics and implemented new guided assembly technology to improve production accuracy
- Led the Material Transport Safety Team, tripling safety tool usage by expanding team member training sessions, and improving test processes and software precision with rigid body analysis and physical validation
- Increased the amount of new equipment analyzed with FEA by developing an internal process and generating design optimization reports utilizing SolidWorks and ANSYS simulation
- Streamlined 3D printing processes by developing SOPs and training team members, leading to increased engagement and successful integration of designs into three projects
- Reduced operational risks and improved compliance in rigging safety through undergoing advanced training, co-leading workshops, and conducting equipment and lifting plan audits

**Process Engineering Intern NPD**, Schweitzer Engineering Laboratories, Inc. – Pullman, WA Mar 2020 – June 2022

- Headed thermal profiling and analysis for through-hole and surface mount PCB components on R&D circuit boards
- Designed parts and tools based on client input using SolidWorks modeling, rapid prototyping, and DFM methodologies
- Conducted compliance analysis of parts, according to company and industry standards, using statistical analysis techniques
- Programmed and developed code for continuous data collection monitoring on crucial machinery
- Trained engineers and created work instructions regarding procedures and best practices

## PROJECTS

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**Infrasonic Wildfire Detector**, University of Idaho Senior Capstone Design Project – Moscow, ID Aug 2021 – May 2022

- Led the design of a compact, single-body maple seed-inspired payload for controlled descent
- Conducted experimental fluid dynamics tests on scale models to determine optimal flight characteristics
- Managed a \$2000 budget for the development of an infrasonic wildfire detection device
- Collaborated with project clients and former team leaders to optimize PCB design

**Vandal Atmospheric Science Team Senior Member**, University of Idaho – Moscow, ID Aug 2019 – May 2022

- Developed an incendiary cut-down system for high-altitude payload release from weather balloons
- Designed a tethered launch protocol to ensure safety during COVID-19

## EDUCATION

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**Bachelor of Science in Mechanical Engineering**, University of Idaho (UI) – Moscow, ID May 2022

- 3.97 GPA, Minor in Spanish, UI Honors College, UI Engineering Scholars, Dean's List